IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appl.No.:	09/745,132	Confirmation No.: 6611
Appellant:	Osamoto et al	
Filed:	December 20, 2000	
TC/AU:	2622	
Examiner:	Hernandez	
Docket:	TI-29873	
Cust.No.:	23494	

APPEAL BRIEF

Commissioner for Patents
P.O.Box 1450
Alexandria VA 22313-1450

Sir:

The attached sheets contain the Rule 41.37 items of appellant's Appeal Brief. The Director is hereby authorized to charge the fee for filing a brief in support of the appeal plus the fee for an extension of time in which to respond plus any other necessary fees to the deposit account of Texas Instruments Incorporated, account No. 20-0668.

Respectfully submitted,

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Rule 41.37(c)(1)(i) Real party of interest

Texas Instruments Incorporated owns the application.

Rule 41.37(c)(1)(ii) Related appeals and interferences

There are no related dispositive appeals or interferences.

Rule 41.37(c)(1)(iii) Status of claims

Claims 1-4 are pending in the application with claims 1-2 allowed and claims 3-4 finally rejected. Claims 3-4 are on appeal.

Rule 41.37(c)(1)(iv) Status of amendments

There is no amendment after final rejection.

Rule 41.37(c)(1)(v) Summary of claimed subject matter

The independent claims on appeal consist of apparatus claim 3.

The subject matter of claim 3 is an interpolator for complementary-color-filtered array image (application page 49, lines 4-7; "CFA interpolation" in Figure 1c; "Ye,Mg,Cy,G" in Figure 10a), with a subarray-to-array interpolator for the color subarrays of a complementary-color-filtered array (application page 49, lines 7-11; Figure 10f upper blocks; Figures 10i-10j); and a filter coupled to the output of the interpolator to adjust the interpolated colors at each pixel by adjusting with an imbalance factor for the pixel (application page 51, lines 9-23; "color adjustment" in Figure 10a; Figure 10f bottom block; Figure 10k).

Note that a CCD/CMOS sensor may provide a color filter array of complementary colors (yellow, magenta, cyan, and green) instead of the usual red, green, blue.

Rule 41.37(c)(1)(vi) Grounds of rejection to be reviewed on appeal

The grounds of rejection to be reviewed on appeal are:

1. Claims 3-4 were rejected under USC 103(a) as being unpatentable over Okada (USP 6,133,953) in view of Takizawa (USP 6,388,706).

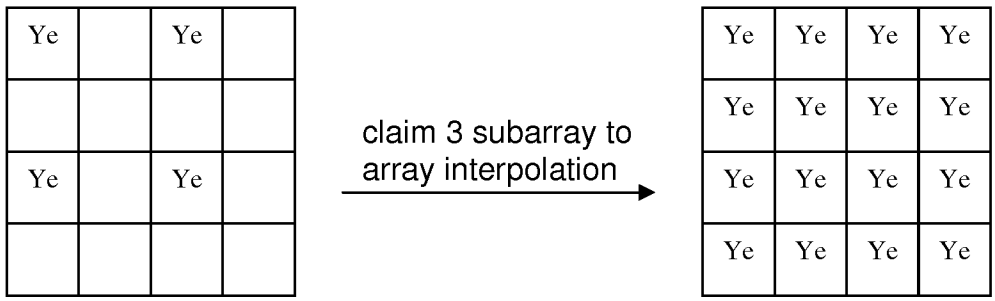
Rule 41.37(c)(1)(vii) Arguments

1, Claims 3-4 were rejected as unpatentable over Okada in view of Takizawa;

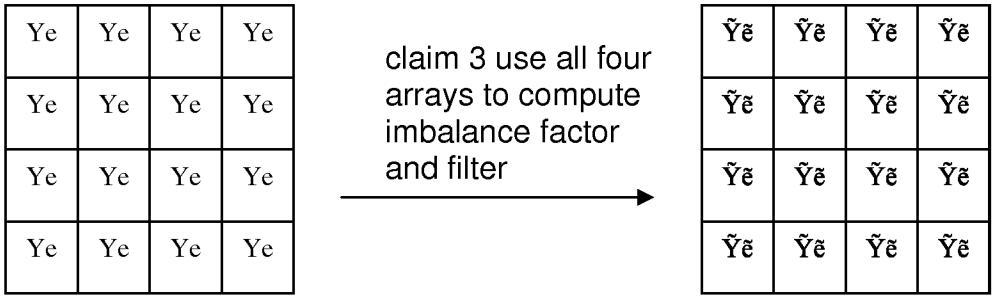
Claims 3-4: Claim 3 requires two items: an interpolator to convert each complementary color (Ye,Mg,Cy,G) subarray of pixels into a full array of pixels plus a following filter to correct color imbalance of each full array. The Examiner cited Okada for the claimed interpolator and added Takizawa for the imbalance filtering after interpolation. However, for each 4x4 pixel region Okada computes a center point (not a pixel location) value for each complementary color subarray and combines these four values to compute a center point luminance (Y) and color differences (Cb and Cr); so there is no claimed subarray to full array interpolation. Takizawa does filter to correct color imbalance, but only for primary colors (R,G,B). In fact, Takizawa begins with complementary color subarrays, but immediately converts the complementary colors into primary colors and then interpolates the primary colors to convert from subarrays to full arrays, and lastly color imbalance filters. So combining Takizawa with Okada would suggest first converting from complementary colors to primary colors at center points of 4x4 regions, then color imbalance filtering, and lastly, computing luminance and color differences for the center point. This does not suggest claim 3.

The foregoing comparison of claim 3 to Okada can be visualized for 4x4 pixel regions (e.g., Okada Figs.2A-2E) as follows.

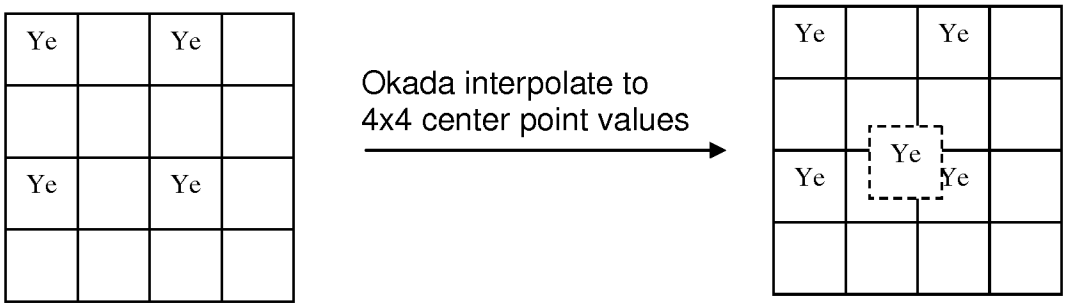
Claim 3: for each of the Ye, Mg, Cy, and G subarrays interpolate to full array (only Ye shown)



for each interpolated array, color imbalance filter (only Ye array shown)

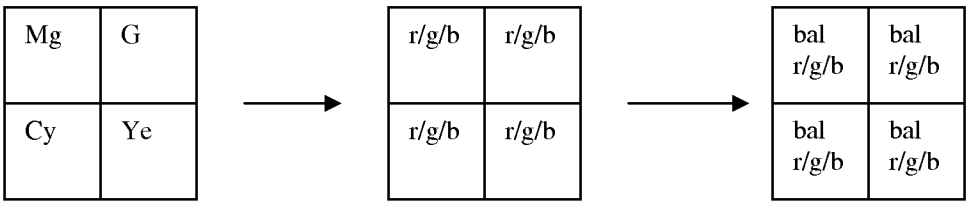


Okada (col.6,ln.51-64): for each of the Ye,Mg,Cy,G subarrays interpolate to 4x4 center point value (only Ye subarray shown)



then compute luminance (Y) and color differences (Cb, Cr) from the center point values

Takizawa: convert complementary colors to RGB then interpolate (Fig.9; col.9, ln.5-10 and Table 4) and lastly, white balance (col.13, ln.53-col.14,ln.23).



Rule 41.37(c)(1)(viii) Claims appendix

3. An interpolator for complementary-color-filtered array image, comprising:

(a) a subarray-to-array interpolator for the color subarrays of a complementary-color-filtered array;

(b) a filter coupled to the output of the interpolator to adjust the interpolated colors at each pixel by adjusting with an imbalance factor for the pixel.

4. The interpolator of claim 3, wherein said subarray-to-array interpolator and said filter are implemented as a program on a programmable processor.

Rule 41.37(c)(1)(ix) Evidence appendix

none

Rule 41.37(c)(1)(x) Related proceedings appendix

none